Amendments to the Specification:

Please replace the abstract of the disclosure with the following amended abstract:

In an OFDM transmission a transmission diversity technique is used without orthogonal ~~signalling~~ signaling. The phases of the subcarriers received at the different antennas ~~antenna means (2, 3)~~ are compared by different techniques and then the phases of the signals for different antennas ~~antenna means (2, 3)~~ are adjusted ~~(19)~~ for a subsequent transmission over the OFDM interface. The phase (and optionally amplitude) adjustment is calculated in only one (transmitting) side and no orthogonal ~~signalling~~ signaling is required. The number of antennas ~~antenna means (2, 3)~~ can be increased as much as necessary to get a sharper beam. The negative effects of fading and interference can be reduced so that ~~on~~ at the same time a down link transmission power can be reduced.

Please replace the paragraph beginning at page 1, line 15 with the following amended paragraph:

From EP-0 881 782 A2 a single carrier maximum-~~ration~~ratio synthetic transmission diversity device as shown in figure 8 is known. According to this known transmission diversity deice antenna elements are arranged at intervals greater than $\lambda/2$. A signal received by an antenna element is sent by way of an antenna multiplexer to a receiver, where the signal is demodulated. The thus-demodulated signal is sent to a phase- and power detection section, where a phase and power of the signal are detected. On the basis of the result of such detection, a control section calculated the phase and power of a transmission signal. On the basis of the result of the calculation, a transmission signal generation circuit transmits a transmission signal to each of the antenna elements by way of the antenna multiplexer.

Please replace the paragraph beginning at page 1, line 37 with the following amended paragraph:

From US 5,973,642 adaptive antenna arrays for orthongonal frequency division multiplexing systems (OFDM systems) with co-channel interference is known. According to this known technique parameters for adaptive antenna arrays in OFDM systems with co-channel interference are estimated. The channel parameter estimation is performed using a two pass process that advantageously expands the temporal scope and considers past, present and future temporal channel estimations during parameter estimation. Channel parameters are estimated by processing he signal through fast FOURIER transforms, temporal filters and inverse fast Fourier transforms. The temporal filters ~~optimise~~ optimize parameters estimation based upon instantaneous correlation of the received signals. This all takes place on the receiver's side of the OFDM system.

Please replace the paragraph beginning at page 2, line 17 with the following amended paragraph:

According to the present invention therefore a transmission diversity device with a plurality of antenna elements is provided. A plurality of processing devices is provided which are respectively connected to one of the antenna elements. Phase comparison and adjustment means are provided for comparing phases of signals received at one of the antenna elements and for adjusting the phases of signals transmitted by the antenna elements according to the result of the comparison. Insofar this technique is known ~~form~~ from EP 0 881 782 A2 representing the closest prior art.

Please replace the paragraph beginning at page 2, line 25 with the following amended paragraph:

The transmission diversity device according to the present invention is ~~characterised~~ characterized in that the transmission diversity deice is designed for a multicarrier transmission such as an OFDM transmission. The transmission diversity device according to the present invention compares the phases of at least one subcarrier of the multicarrier transmission with the phase of at least one subcarrier of at least one other antenna element and adjusts it subsequently for a transmission. In the OFDM case the symbol duration is much longer than in the single carrier case such that a phase comparison can be done at any symbol and pilot symbols are not necessary therefore.

Please replace the paragraph beginning at page 2, line 34 with the following amended paragraph:

According to the present invention subcarriers and not the received signal itself are to be phase processed.

Please replace the paragraph beginning at page 3, line 1 with the following amended paragraph:

Futhermore, it can comprise a function of averaging the phase differences of a plurality of subcarriers respectively received at one antenna element. Note that in the case of a multicarrier transmission system, each of the antenna elements receives a plurality of ~~signal~~ signals with different subcarriers.

Please replace the paragraph beginning at page 7, line 16 with the following amended paragraph:

At the base side ~~then~~ a relative phase comparison of each antenna element is performed using the up ling signal

Please replace the paragraph beginning at page 7, line 21 with the following amended paragraph:

According to a first proposal phases between different antenna element are compared by averaging each subcarrier phase difference. Alternatively, selected (reliable) sub-carriers can be phase compared. As a further alternative time domain received data can be correlated and the phase difference can then be calculated by multiplying the correlation result by $2 \cdot \pi$ fc, wherein fc is a carrier frequency. fc in principal is different for each subcarrier, however for most of the cases fc can be a representative frequency or ~~centre~~ center frequency. (The phase difference ~~adjustement~~ adjustment unit 11 can compensate for this problems.)

Please replace the paragraph beginning at page 7, line 30 with the following amended paragraph:

Before averaging, the phase at each subcarrier are frequency adjusted to compensate for the frequency differences of the subcarriers. A base subcarrier can be selected, which can be the ~~centre~~ center subcarrier or any subcarrier representing an OFDM symbol. All phase differences and amplitude differences are then measured relative to this base subcarrier.

Please insert the following heading after page 1, line 10:

BACKGROUND

Please insert the following heading after page 2, line 8:

SUMMARY

Please insert the following heading after page 4, line 21:

BRIEF DESCRIPTION OF THE DRAWINGS

Please insert the following heading after page 5, line 3:

DETAILED DESCRIPTION